SEARCH SYSTEM FOR PROVIDING INFORMATION OF KEYWORD INPUT FREQUENCY BY CATEGORY AND METHOD THEREOF

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of PCT Application No. PCT/KR2004/003390 filed December 22, 2004, which claims the benefit of priority from Korean Patent Application No. 10-2003-0094816 filed on December 22, 2003. The disclosures of International Application PCT Application No. PCT/KR2004/003390 and Korean Patent Application No. 10-2003-0094816 are incorporated herein by reference. ~~the disclosure of which is incorporated herein by reference~~.

Technical Field

[0002] The present invention relates to a search service system and a method thereof, and more particularly, relates to a search service system capable of providing ~~an input order~~ a popularity rank of a keyword which is input into the search service system, according to a category to which the keyword belongs, and a method thereof.

Background Art

[0003] The most general search service method provided by a search service system is a keyword search service. In case that a keyword is input from a user, the search service system, which provides the keyword search service, provides the user with search results including the keyword (e.g., a web site including the keyword, an article including the keyword, an image with a file name including the keyword, etc).

[0004] At this time, the search service system according to the prior art further provides a service of notifying a user of 'a popular search word'. A drawing symbol 101 of FIG 1 illustrates one example of popular search words provided for the user, in the search service system according to the prior art.

[0005] However, the service of providing popular search words according to the prior art is configured to display several popular search words whose frequency ranks high, on a web page or the like, by using the number of keywords input by users per certain period. Thus, there is a problem that it is impossible to provide users with popular search words in real time.

[0006] Furthermore, the service of providing popular search words according to the prior art is configured to determine and provide popular search words by using only the number of input keywords, without classifying keywords by categories. Thus, there is a problem that what kind of keyword a user inputs, the user has no choice but to be provided with the same popular keywords such as a singer (Kyoo-chan Cho), a drama (Lady Han), a movie (Ocean's twelve) and the like, as illustrated in FIG. 1.

[0007] Furthermore, the service of providing popular search words according to the prior art neither compute how popular each of popular search words is, nor provide the computed results. Thus, there is a limit that users cannot know which popular search word among popular search words is more popular.

[0008] Furthermore, in the service of providing popular search words according to the prior art, in case that the keyword input by a user is not a popular search word, there is a problem that the user cannot know how much interest other users have in an issue ~~related to~~ associated with the keyword input by oneself.

Brief Description of the Drawings

[0009] FIG. 1 is a drawing illustrating one example of popular search words provided for a user by a search service system according to the prior art.

[0010] FIG. 2 is a drawing illustrating a network connection of a search service system according to one embodiment of the present invention.

[0011] FIG. 3 is an internal block diagram illustrating configuration of a search service system according to one embodiment of the present invention.

[0012] FIG. 4a is drawing illustrating one example of classification record maintained in a category classification database, in one embodiment of the present invention.

[0013] FIG. 4b is a drawing illustrating one example of a predetermined group of keywords maintained in a keyword database and data of the number of input keywords corresponding thereto, in one embodiment of the present invention.

[0014] FIGS. 5a to 5d are drawings illustrating examples of ~~an input order~~ a popularity rank provided for a user terminal by a search service system according to each embodiment of the present invention.

[0015] FIG. 6 is a flowchart illustrating a search service method according to another embodiment of the present invention.

[0016] FIG. 7 is an internal block diagram illustrating a general-purpose computer which can be adopted in performing a search service method according to the present invention.

Disclosure of the Invention

Technical Questions

[0017] The present invention is conceived to solve the aforementioned problems in the prior art, one object of the present invention is to provide search service system and method which can provide ~~input orders~~ popularity ranks of keywords, by categories of keywords [[input]] used in the ~~search service system~~ prior searches.

[0018] Furthermore, other object of the present invention is to provide search service system and method which can further provide other keywords ~~belonging to~~ associated with a category ~~related to~~ associated with a keyword input in the search service system, and ~~an input order~~ a

popularity rank of each of the keywords.

[0019] Furthermore, another object of the present invention is to provide search service system and method which, based on the latest interests of users who [[put]] input keywords, can compute and provide ~~input orders~~ popularity ranks of keywords, by classifying categories ~~related to~~ associated with the keyword into a representative category and a general category and by enabling the representative category and the general category to be changeable.

[0020] Furthermore, another object of the present invention is to provide search service system and method which can include keywords having similar or same meaning in one group of keywords, and in case that an input keyword is ~~included in~~ associated with the keyword group, compute and provide ~~an input order of keyword~~ a popularity rank of keywords compatible with a user's intention by increasing the number of input keywords ~~related to~~ associated with the keyword group.

Technical Solutions

[0021] In order to achieve the aforementioned objects and solve the problems in the prior art, a search service system according to the present invention comprises a category classification database including at least one classification record, wherein the classification record comprises a representative category ~~related to~~ associated with a predetermined keyword group and a general category ~~related thereto~~ associated therewith; a keyword database maintaining a predetermined keyword group and data indicative of the number of [[input]] searches made using the keywords corresponding thereto, wherein the keyword group comprises a representative keyword or a keyword having the same or similar meaning thereto; an input unit for receiving a keyword from a user through a communication network; a first search unit for searching the category classification database for a representative category ~~related to~~ associated with a first

keyword group including the received keyword, and determining a second keyword group ~~related to~~ associated with the searched representative category, wherein the second keyword group includes the first keyword group; a second search unit for searching the keyword database for the second keyword group and data [[of]] regarding the number of [[input]] searched keywords corresponding thereto; ~~an input order~~ a popularity rank computing unit for computing ~~an input order~~ a popularity rank within the searched representative category of the first keyword group by using the second keyword group and data [[of]] regarding the number of [[input]] searched keywords corresponding thereto; an output unit for providing the user with the computed ~~input order~~ popularity rank through the communication network, in association with the searched representative category and a representative keyword of the first keyword group; and a updating unit for updating data indicative of the number of [[input]] searched keywords corresponding to the first keyword group, in the keyword database, in response to the input of the keyword.

[0022] According to one aspect of the present invention, the search service system further comprises a management unit for: receiving a selection of a representative category ~~related to~~ associated with a predetermined keyword group or a selection of a general category related thereto, from a manager; and changing the received representative category ~~related to~~ associated with the keyword group or the received general category related thereto in the classification record.

[0023] Furthermore, according to other aspect of the present invention, the ~~input order~~ popularity rank computing unit respectively computes a second ~~input order~~ popularity rank of the second keyword group within the representative category, based on the second keyword group and data indicative of the number of [[input]] searches made using the keywords corresponding thereto.

[0024] Furthermore, according to another aspect of the present invention, the output unit

provides the user with the second ~~input order~~ popularity rank through the communication network, in association with the searched representative category and a representative keyword of the second keyword group.

Best Mode for Carrying Out the Invention

[0025] Hereinafter, the present invention will be in detail described with reference to the accompanying drawings.

[0026] FIG. 2 is a drawing illustrating a network connection of a search service system according to one embodiment of the present invention. Users access [[of]] a search service system 200 through wired/wireless communication network by using a user terminal 210a or 210b, and input a keyword. The search service system 200 transmits a keyword search result corresponding to the keyword, to the user terminal 210a or 210b. Moreover, the search service system 200 according to the present invention further transmits ~~an input order~~ a popularity rank of the input keyword by category, to the user terminal 210a or 210b.

[0027] FIG. 3 is an internal block diagram illustrating configuration of the search service system 200 according to one embodiment of the present invention. A search service system 300 comprises a category classification database 310, a keyword database 320, an input unit 330, a first search unit 340, a second search unit 350, ~~an input order~~ a popularity rank computing unit 360, an updating unit 370, an output unit 380 and a management unit 390.

[0028] ~~In the meantime, the~~ The term [[of]] "a keyword group" used in the present specification means a group comprising one representative keyword and a keyword having the same/similar meaning thereto, wherein the term of "the representative keyword" means a keyword provided to a user from keywords comprised in the keyword group, together with ~~an input order~~ a popularity rank.

[0029] Furthermore, the term [[of]] "a first keyword group" used in the present specification means a keyword group including a keyword input from a user, among keyword groups. The term [[of]] "a second keyword group" means a keyword group whose (representative) category is the same as that of the first keyword group, among keyword groups. Therefore, the second keyword group includes the first keyword group.

[0030] In addition, the term [[of]] "a second ~~input order~~ popularity rank" used in the present specification means ~~an input order~~ a popularity rank of the second keyword group within the (representative) category.

[0031] The category classification database 310 includes at least one classification record as indicated by a drawing symbol 401 in FIG. 4a. The classification record 401 comprises at least one representative category ~~related to~~ associated with a predetermined keyword group and at least one general category ~~related thereto~~ associated therewith. At this time, a keyword group identifier may be used to identify the keyword group. In the present embodiment, as for an example, the representative keyword included in the keyword group is used as an identifier thereof, which is illustrated in FIG. 4a. This is for convenient understanding. In addition, although there may be a plurality of keyword groups ~~related to~~ associated with one representative category, in the present embodiment, as for an example, there is only one keyword group having representative keywords 'seven', 'lexy' and 'leesooyoung' respectively, as a keyword group ~~related to~~ associated with a representative category 'singer, as illustrated in FIG. 4a.

[0032] According to one embodiment of the present invention, the search service system 300 includes the management unit 390 for managing the category classification database 310. The management unit 310 receives a selection of a representative category ~~related to~~ associated with a predetermined keyword group or a selection of a general category related thereto, from a manager; and changes the received representative category ~~related to~~ associated with the

keyword group or the received general category related thereto in the classification record. For example, [[a]] the representative category ~~used to 'movie', in association with a~~ for the keyword [[']]'seven' may formerly have been 'movie'. However, in this case [[that]] it [[is]] was determined that users [[input]] searched the keyword 'seven' in order to search for a singer 'seven', not a movie titled by 'seven', and so the manager inputs a selection of 'singer' for the representative category and a selection of 'movie' for the general category, in association with the keyword group including the keyword 'seven'. The management unit 390 enables the classification record 401 as illustrated in FIG. 4a to be maintained, based on the selection of the representative category and the selection of the general category inputted in association with the keyword group including the keyword 'seven'. Namely, it is possible to change the representative category or general category included in at least one classification record which is maintained in the category classification database 310.

[0033] According to the above configuration ~~like above~~, "since ~~an input order~~ a popularity rank is computed only in association with the representative category", the search service system 300 is enabled to compute ~~an input order~~ a popularity rank of a keyword in correspondence with a user's intention. Namely, since concepts of the representative category and the general category are used, for users who [[input]] search the keyword 'seven' to search for the singer 'seven', it is possible to prevent the unexpected movie 'seven' of the movie category from ranking high in ~~an input order~~ a popularity rank of the keyword.

[0034] Therefore, the keyword 'seven' ~~intended for~~ is currently associated with the singer 'seven', ~~is currently input, however, in case that~~ ,but if the social [[issue]] climate surrounding the term 'seven' changes, for example, [[into]] such that 'seven' becomes a drama ~~'seven'~~ and user's interests thereon go up, and it is determined that users [[input]] search the keyword 'seven' to search for the drama 'seven', the management unit 390 changes the representative category

~~related to~~ associated with the keyword 'seven' into 'a drama' and the general category into 'a singer'. Thus, ~~an input order~~ a popularity rank of a keyword corresponding to a user's intention can be computed.

[0035] The keyword database 320 maintains a predetermined keyword group and data indicative of the number of [[input]] previously searched keywords corresponding thereto, as illustrated in FIG. 4b. A keyword group includes a representative keyword and at least one keyword having the same/similar meaning thereto. For example, as indicated by a drawing symbol 402, the representative keyword is 'seven (Korean) ', the keyword having the same/similar meaning to 'seven (Korean)' is 'seven', and 'seven (Korean)' and 'seven' are included in one keyword group.

[0036] The search service system 300 according to the present embodiment is intended to compute ~~an input order~~ a popularity rank of a keyword corresponding to a user's ~~intention~~ intent by using a concept of a keyword group including at least one keyword. For example, in case that users want to search for the singer 'seven', they often [[input]] search 'seven (in Korean)' or 'seven' as a keyword. At this time, the keyword 'seven (Korean)' and 'seven' are used for the same target. Therefore, in case that ~~an input order~~ a popularity rank is computed based on the number of ~~inputs~~ searches corresponding to each of keywords 'seven (Korean)' and 'seven', unlike users' intention, there may be an event that their interests with respect to the singer 'seven' might be depreciated. For example, in case that the ~~input number of~~ keyword 'leehyori' ~~is 300~~ was previously searched 300 times, that of keyword 'seven (Korean)' is 280 and that of keyword 'seven' is 50, the total number of [[input]] previously searched keywords with respect to the signer 'seven' is "280 (seven (Korean)) + 50 (seven) = 330". However, since ~~an input order~~ a popularity rank with respect to the keyword 'leehyori' is computed higher than either 'seven (Korean)' or 'seven' individually, there is a concern that ~~an input order~~ a popularity rank not corresponding to a user's intention, might be computed, such that users might think that people

are more interested in the singer 'leehyori' rather than the singer 'seven'. Therefore, in case that the keyword 'seven (Korean)' is [[input]] searched and in case that the keyword 'seven' is [[input]] searched, in order to compute the number of ~~inputs~~ searches by adding up the two cases, the search service system according to the present invention is configured to comprise a representative keyword (seven (Korean)) and a keyword (seven) having the same/similar meaning thereto, as one keyword group.

[0037] The input unit 330 receives a keyword from the user terminal 210a or 210b, through the communication network. For example, the received keyword is 'seven'. A keyword group including the received keyword 'seven' is a first keyword group. In the present embodiment, the representative keyword 'seven (Korean)' of the first keyword group is used as an identifier of the first keyword group.

[0038] The first search unit 340 searches the category classification database 310 for the representative category ~~related to~~ associated with the first keyword group. A 'singer' is searched as the representative category ~~related to~~ associated with 'seven (Korean)', the identifier of the first keyword group, from the classification record.

[0039] Moreover, the first search unit 340 determines a second keyword group ~~related to~~ associated with the searched representative category 'singer' by referring to the category classification database 310. A keyword group ~~related to~~ associated with the searched representative category 'singer' (i.e., keyword groups whose representative keywords are 'seven (Korean)', 'lexy' and 'leesooyoung') is the second keyword group.

[0040] The second search unit 350 searches the keyword database 320 for the second keyword group and data indicative of the number of [[input]] searched keywords corresponding thereto. Namely, '123', data indicative of the number of [[input]] searched keywords ~~related to~~ associated with the second keyword group 'lexy'[[,]]; '234', data indicative of the number of [[input]]

searched keywords ~~related to~~ associated with the second keyword group 'seven (Korean)'; and '98', data indicative of the number of [[input]] searched keywords ~~related to~~ associated with the second keyword group 'leesooyoung' are respectively searched.

[0041] The ~~input order~~ popularity rank computing unit 360 computes ~~an input order~~ a popularity rank of the first keyword group by using the second keyword group and data of the number of [[input]] previously searched keywords corresponding thereto which are searched like above. The ~~sizes of date of the~~ number of the searched [[input]] keywords are in order of the second keyword group 'seven (Korean)', the second keyword group 'lexy' and the second keyword group 'leesooyoung'. Thus, the ~~input order~~ popularity rank of the first keyword group 'seven (Korean)' is 1st.

[0042] As aforementioned, according to the present embodiment, since ~~an input order~~ a popularity rank of the first keyword group is computed from the second keyword group associated with a representative category, the ~~input order~~ popularity rank is computed by category.

[0043] The output unit 370 provides the user terminal 210a or 210b with the computed ~~input order~~ popularity rank, in association with the representative category 'singer' and the representative keyword 'seven (Korean)' of the first keyword group. FIG. 5a is a drawing illustrating one example of ~~an input order~~ a popularity rank provided for the user terminal 210a or 210b, according to the configuration like above. As indicated by a drawing symbol 501 in FIG. 5a, in case that a user ~~inputs~~ searches 'seven' in the search service system 300, the search service system 300, with respect to the keyword 'seven', further provides ~~an input order~~ a popularity rank in association with the representative category 'singer' and the representative keyword 'seven (Korean)' of the first keyword group, as indicated by a drawing symbol 502, together with keyword search results.

[0044] In addition, according to another embodiment of the present invention, the ~~input order~~ popularity rank computing unit 360 respectively computes second ~~input orders~~ popularity ranks of the second keyword group, based on the second keyword group and data indicative of the number of [[input]] searched keywords corresponding thereto. In the present embodiment, second ~~input orders~~ popularity ranks are respectively computed in such a way that the second keyword group 'lexy' is 2nd, the second keyword group 'seven (Korean)' is 1st, and the second keyword group 'leesooyoung' is 3rd.

[0045] The output unit 380 provides the user terminal 210a or 210b with the second ~~input order~~ popularity rank, in association with the representative category 'singer' and a representative keyword of the second keyword group. FIG. 5b is a drawing illustrating one example of the second ~~input order~~ popularity rank provided for the user terminal 210a or 210b according to the present embodiment. According to the present embodiment, in case that the keyword 'seven' [[input]] searched by a user belongs to the category 'singer', ~~input orders~~ popularity ranks of other keyword groups ~~belonging to~~ associated with the category 'singer' are also provided as indicated by drawing symbol 520. A drawing symbol 521 means each second ~~input order~~ popularity rank and a drawing symbol 522 means a representative keyword of each second keyword group.

[0046] In addition, according to another embodiment of the present invention, the output unit 380 selects the predetermined number of second keyword groups whose second ~~input orders~~ popularity ranks rank high, and provides a user with only second ~~input order related to~~ popularity rank associated with the selected second keyword group. In the aforementioned embodiment, there is described that second keyword groups are only three. However, generally, there exists a plurality of second keyword groups ~~related to~~ associated with one representative category. At this time, in case that all the ~~input orders related to~~ popularity ranks associated with second

keyword groups are provided for a user, too much information is unnecessarily provided, which might offend the user. Accordingly, the search service system 300 according to the present embodiment provides the predetermined number of second keyword groups whose second ~~input order~~ popularity rank rank high, from second keyword groups ~~related to~~ associated with a representative category. For example, the search service system 300 selects 10 groups of second keyword groups whose ~~input orders~~ popularity ranks are within top ten, and provides the second ~~input orders~~ popularity ranks thereof.

[0047] FIG 5c is a drawing illustrating one example of providing second ~~input orders~~ popularity ranks of second keyword groups whose second ~~input orders~~ popularity ranks are within top ten, in case that there are a plurality of second keyword groups ~~related to~~ associated with the representative category. Like the aforementioned embodiment, the second ~~input order~~ popularity rank may be provided in association with the representative category, the representative keyword of the second keyword and the fluctuation band thereof.

[0048] In the meantime, in case that ~~an input order~~ a popularity rank of the first keyword group is out of top ten among the second ~~input orders~~ popularity ranks, the search service system 300 provides second ~~input orders~~ popularity ranks of second keyword groups to top ten, separately from the ~~input order~~ popularity rank of the first keyword group. FIG. 5d is a drawing illustrating one example of ~~input orders~~ popularity ranks provided for the user terminal 210a or 210b, in case that ~~an input order~~ a popularity rank of a first keyword group is out of top ten. Namely, in case that the ~~input order~~ popularity rank of the first keyword group ~~related to~~ associated with the keyword 'seven' [[input]] searched by a user ranks 53rd among second keyword groups ~~relatedt~~ associated with the representative category 'singer', the ~~input order related to~~ popularity rank associated with the first keyword group and second ~~input orders~~ popularity ranks of second keyword groups which are within top ten among the second keyword

groups are respectively provided for the user.

[0049] The updating unit 370 updates data of the number of [[input]] searched keywords ~~related to~~ associated with the first keyword group of the keyword database 320, in response to [[input]] searching of the keyword 'seven'. Namely, the updating unit 370 updates '234', data indicative of the number of [[input]] searched keywords ~~related to~~ associated with the first keyword group including the keyword 'seven', to '235'. Based on setting of the search service system 300, the updating unit 370 may update data indicative of the number of [[input]] searched keywords before or after computing the ~~input order~~ popularity rank.

[0050] Furthermore, according to another embodiment of the present invention, the search service system 300 provides ~~input orders~~ popularity ranks by time period with respect to keywords. The keyword database 320 maintains data indicative of the number of [[input]] searched keywords by time period corresponding to a predetermined keyword group. The updating unit 370 ~~updates~~ resets the data indicative of the number of [[input]] searched keywords by time period, to 0 periodically. The cycle may be a time period set by a manager.

[0051] Like above, since the updating unit 370 updates data of the number of [[input]] searched keywords to 0, according to the time period, the ~~input orders~~ popularity ranks computed by the ~~input order~~ popularity rank computing unit 360 are ones by time period. According to the present embodiment, the user provided with ~~input orders~~ popularity ranks by time period can know the latest main issue in a field ~~related to~~ associated with the representative category.

[0052] Furthermore, according to another embodiment of the present invention, the keyword database 320 may maintain both the [[whole]] non-temporal data indicative of the number of [[input]] searched keywords and data indicative of the number of [[input]] searched keywords by time period. At this time, the ~~input order~~ popularity rank computing unit 360 may compute the ~~whole input orders and input orders by~~ non-temporal popularity ranks and popularity ranks by

time period by respectively using the [[whole]] non-temporal data indicative of the number of [[input]] searched keywords and the data indicative of the number of [[input]] search keywords by time period. The output unit 380 may provide a user with the computed ~~whole input orders and input orders by~~ non-temporal popularity ranks and popularity ranks by time period.

[0053] Furthermore, according to another embodiment of the present invention, the search service system 300 further provides information on a fluctuation band of ~~input order~~ popularity rank. The search service system 300 according to the present embodiment further comprises a storage unit, a third search unit, ~~an input order~~ a popularity rank band computing unit and ~~an input order~~ a popularity rank updating unit.

[0054] The storage unit stores ~~an input order~~ a popularity rank of a keyword group ~~related to~~ associated with a predetermined category. The ~~input order~~ popularity rank stored in the storage unit is ~~an input order~~ a popularity rank computed by the ~~input order~~ popularity rank computing unit 360, according to ~~input of a keyword~~ the keywords searched just before the user inputs the keyword.

[0055] The third search unit searches the storage unit for ~~an input order~~ a popularity rank of a keyword group which corresponds to the second keyword group and is ~~related to~~ associated with the representative category. The ~~input order~~ popularity rank band computing unit computes a fluctuation band of ~~input orders~~ popularity ranks of the second keyword group, by comparing the searched ~~input order~~ popularity rank with the second ~~input order~~ popularity rank of the second keyword group in the representative category. For example, in case that the ~~input order~~ popularity rank of the keyword group 'changnara', which is stored in the storage unit in association with the category 'singer', ranks 1st, and the second ~~input order~~ popularity rank, which is newly computed in such a way that a user ~~inputs~~ searches a keyword ~~related to~~ associated with the category 'singer', ranks 2nd, the ~~input order~~ popularity rank-band computing

unit computes '-1', the fluctuation band.

[0056] The output unit 380 provides the computed fluctuation band for the user terminal 210a or 210b in association with the second ~~input order~~ popularity rank, as indicated by a drawing symbol 523 in FIG. 5c. The ~~input order~~ popularity rank updating unit updates ~~an input order~~ a popularity rank of a keyword group that corresponds to the second keyword group and is ~~related to~~ associated with the representative category 'singer', to the second ~~input order~~ popularity rank in the storage unit. At this time, this is used as data for computing a fluctuation of a second ~~input order~~ popularity rank which is newly computed by [[input]] the searching of a new keyword. Among the fluctuation band indicated by a drawing symbol 523, in comparison with the last time, '+1' is used to show that the ~~input order~~ popularity rank is up by one place, '-1' is used to show that the ~~input order~~ popularity rank is down by one place, and '0' is used to show that the ~~input order~~ popularity rank has no change.

[0057] Based on the configuration like above, according to the present embodiment, a user can know ~~an input order~~ a popularity rank of one's [[input]] searched keyword in a predetermined (representative) category and ~~input orders~~ popularity ranks of other keywords ~~belonging to~~ associated with the (representative) category. Together with this, the user can know ~~whether~~ of change in the ~~input order~~ popularity rank/the fluctuation band thereof. Therefore, the user can know ordinary people's interests and any change thereof.

[0058] Hereinafter, the search service system according to another embodiment of the present invention will be described with reference to FIG. 3. According to the present embodiment, the classification record maintained in the category classification database 310 includes a representative category ~~related to~~ associated with a predetermined keyword and a general category related thereto. In addition, the keyword database 320 maintains a predetermined keyword and data indicative of the number of [[input]] searched keywords corresponding thereto.

The input unit 330 receives a first keyword from the user terminal 210a or 210b through the communication network. The first search unit 340 searches the category classification database 310 for a representative category ~~related to~~ associated with the first keyword, and determines a second keyword ~~related to~~ associated with the searched representative category.

[0059] The second search unit 350 searches the keyword database 320 for the second keyword and data indicative of the number of [[input]] searched keywords corresponding thereto.

[0060] The ~~input order~~ popularity rank computing unit 360 computes ~~an input order~~ a popularity rank of the second keyword by using the second keyword and data indicative of the number of [[input]] searched keywords corresponding thereto. Since the first keyword is one of the second keywords, ~~an input order~~ a popularity rank of the first keyword is also computed.

[0061] The output unit 380 provides the user terminal 210a or 210b with the ~~input order~~ popularity rank of the second keyword in association with the representative category. In addition, according to another embodiment of the present invention, the output unit 380 provides only ~~input order~~ popularity rank of the predetermined number of second keywords whose ~~input orders~~ popularity ranks rank high among the second keywords. At this time, in case that the first keyword is not included in the predetermined number of second keywords, the output unit 380 further provides the ~~input order~~ popularity rank of the first keyword, separately from the ~~input order~~ popularity rank of the predetermined number of the second keywords.

[0062] The updating unit 370 increases data indicative of the number of [[input]] searched keywords corresponding to the first keyword group, in the keyword database 310, in response to the [[input]] searching of the first keyword.

[0063] The management unit 390 receives a selection of a representative category ~~related to~~ associated with a predetermined keyword or a selection of a general category related thereto, from a manager; and changes the received representative category ~~related to~~ associated with the

keyword group or the received general category ~~related to~~ associated therewith in the classification record.

[0064] Since the search service system according to the present embodiment does not adopt a concept of a keyword group, with respect to the keyword 'seven (Korean)' and the keyword 'seven', data indicative of the number of [[input]] searched keywords are respectively maintained and ~~input orders~~ popularity ranks thereof are also respectively computed. Otherwise, in case that data only with respect to the keyword 'seven (Korean) is maintained in the keyword database 320 and data with respect to the keyword 'seven' is not maintained therein, the ~~input order~~ popularity rank with respect to the keyword 'seven' is not computed. Accordingly, in case that ~~an input order~~ a popularity rank is computed according to the present embodiment and provided for a user, a keyword most adopted by users (i.e. the keyword 'seven (Korean) rather than the keyword 'seven') is used to indicate the same target.

[0065] Hereinafter, the search service system according to another embodiment of the present invention will be described with reference to FIG. 3. According to the present embodiment, the classification record maintained in the category classification database 310 includes a category ~~related to~~ associated with a predetermined keyword group. In addition, the keyword database 320 maintains a predetermined keyword group and data indicative of the number of [[input]] searched keywords corresponding thereto. The keyword group is a group including one representative keyword and a keyword having the same/similar meaning thereto.

[0066] The input unit 330 receives a keyword from the user terminal 210a or 210b through the communication network. A keyword group including the received keyword is a first keyword group.

[0067] The first search unit 340 searches the category classification database 310 for a category ~~related to~~ associated with the first keyword group, and determines a second keyword group

~~related to~~ associated with the searched category.

[0068] The second search unit 350 searches the keyword database 320 for the second keyword group and data indicative of the number of [[input]] searched keywords corresponding thereto.

[0069] The ~~input order~~ popularity rank computing unit 360 computes ~~an input order~~ a popularity rank of the second keyword group by using the second keyword group and data indicative of the number of [[input]] searched keywords corresponding thereto. At this time, since the first keyword group is one of the second keyword groups, the ~~input order~~ popularity rank of the first keyword group is also computed.

[0070] The output unit 380 provides the user terminal 210a or 210b with the ~~input order~~ popularity rank of the second keyword group, in association with the searched category and a representative keyword included in the second keyword group. In addition, according to another embodiment of the present invention, the output unit 380 provides only ~~input order~~ popularity rank of the predetermined number of second keyword groups whose ~~input orders~~ popularity ranks rank high among the second keyword groups. At this time, in case that the first keyword group is not included in the predetermined number of second keyword groups, the output unit 380 provides the ~~input order~~ popularity rank of the first keyword group, separately from the ~~input order~~ popularity rank of the predetermined number of second keywords.

[0071] The updating unit 370 increases data of the number of [[input]] searched keywords corresponding to the first keyword group including the keyword, in the keyword database 310, in response to the [[input]] searching of the keyword.

[0072] According to the present embodiment, since concepts of representative category/general category are not adopted, in case that ~~an input order~~ a popularity rank corresponding to the first keyword group is computed, ~~an input order~~ a popularity rank of the first keyword group in all the categories ~~related thereto~~ associated therewith is computed. Therefore, in case that there are a

plurality of categories ~~related to~~ associated with the first keyword group, according to the embodiment, the output unit 380 may respectively compute ~~input orders~~ popularity ranks of both the first keyword group and the second keyword group for each of said plurality of the categories and respectively provide the computed ~~input orders~~ popularity ranks, or may select the predetermined number of categories from said plurality of the categories based on a predetermined criterion and compute ~~input orders~~ popularity ranks of the first group and the second group for each of the selected category and provide the computed ~~input orders~~ popularity ranks.

[0073] Hereinafter, the method for providing a search service according to another embodiment of the present invention will be described. FIG. 6 is a flowchart illustrating the search service method according to the present embodiment. The search service method according to the present embodiment may be implemented by the search service system 200 as illustrated in FIG.. 2.

[0074] In the step 601, the search service system 200 maintains at least one classification record, as illustrated in FIG. 4, in a predetermined keyword classification database. The classification record includes a representative category ~~related to~~ associated with a predetermined keyword group and a general category related thereto. The representative category or the general category maintained in the keyword classification database may be corrected according to a manager's instruction.

[0075] In the step 602, the search service system 200 maintains a predetermined keyword group and data indicative of the number of [[input]] searched keywords corresponding thereto. The keyword group includes a representative keyword or a keyword having the same/similar meaning thereto. For example, the search service system 200 includes 'mcthemax (Korean)' and 'M.C The Max' in the same keyword group, and enables one keyword group to be formed by setting

'mcthemax (Korean)' as a representative keyword.

[0076] In the step 603, the search service system 200 receives a keyword from the user terminal 210a or 210b. At this time, in case that 'mc the max (Korean)' is received, there may be adopted variety of algorithms such as algorithm enabling 'mc the max (Korean)' to be regarded as same to 'mcthemax(Korean)' by deleting [[space]] spaces between words ~~therebetween~~.

[0077] In the step 604, the search service system 200 searches the category classification database for a representative category ~~related to~~ associated with a first keyword group including the keyword.

[0078] The search service system 200 searches the category classification database for a second keyword group ~~related to~~ associated with the searched representative category, in the step 604 and searches the keyword database for a second keyword group ~~related to~~ associated with the searched representative category and data indicative of the number of [[input]] searched keywords corresponding to the second keyword group. Therefore, a keyword group ~~belonging to~~ associated with the representative category that is ~~related to~~ associated with the keyword [[input]] searched by the user and data indicative of the number of [[input]] searched keywords corresponding to the keyword group are searched.

[0079] In the step 606, the search service system 200 respectively computes ~~an input order~~ a popularity rank of the second keyword group by using data indicative of the number of [[input]] searched keywords thereof. Since at least one second keyword group includes the first keyword group, according to definition of terms used in the present specification, ~~an input order~~ a popularity rank of the first keyword group is also automatically computed in the step 606.

[0080] In the step 607, the search service system 200 selects the predetermined number of second keyword groups based on the ~~input order~~ popularity rank. For example, the search service system 200 selects only second keyword groups whose ~~input orders~~ popularity ranks are

within top ten.

[0081] In case that the selected second keyword group includes the first keyword group, i.e. in case that the ~~input order~~ popularity rank of the first keyword group is within top ten, the search service system 200 provides the second ~~input order~~ popularity rank for the user terminal 210a or 210b, in association with the representative category and a representative keyword included in the second keyword group, in the step 609. A user is provided with ~~input orders~~ popularity ranks by category as illustrated in FIG. 5c, by configuration like above.

[0082] In the meantime, in case that the selected second keyword group does not include the first keyword group, i.e. in case that ~~an input order~~ a popularity rank of the first keyword group is out of top ten, the search service system 200 provides the user terminal 210a or 210b with the second ~~input order~~ popularity rank and the ~~input order~~ popularity rank of the first keyword respectively, in the step 610. The ~~input order~~ popularity rank of the first keyword group is provided in association with the representative category and a representative keyword included in the first keyword group, and the second ~~input order~~ popularity rank is provided in association with the representative category and a representative keyword included in the second keyword group. A user is provided with ~~input orders~~ popularity ranks by category, as illustrated in FIG. 5d, by configuration like above.

[0083] According to another embodiment of the present invention, the search service system 200 may provide a user with only ~~input order~~ popularity rank corresponding to a first keyword group, in association with a representative category. In addition, according to another embodiment of the present invention, the search service system 200 may provide only ~~input order related to~~ popularity rank associated with the second keyword group whose ~~input order~~ popularity rank is within the predetermined number. At this time, in case that the first keyword group is not included in the second keyword group, ~~an input order related to~~ a popularity rank associated with

the first keyword group is not provided.

[0084] As aforementioned, the search service method according to the present embodiment adds up each of the number of [[input]] different keywords which are [[input]] searched by a user who intends to search for the same target, and computes ~~an input order~~ a popularity rank by keyword groups, by adopting a concept of a keyword group. Thus, it is possible to compute ~~an input order~~ a popularity rank corresponding to the user's intention. In addition, as aforementioned, the search service method according to the present embodiment is configured to adopt a concept of representative category/general category and correct the representative category or the general category according to social issues. Accordingly, ~~an input order~~ a popularity rank in a category (i.e. a representative category) of a field intended by a user is computed.

[0085] Furthermore, according to another embodiment of the present invention, ~~an input order~~ a popularity rank by representative category may be computed in association with a keyword, by maintaining a representative category/general category by keywords, without adopting a concept of a keyword group, and maintaining data indicative of the number of [[input]] searched keywords thereby.

[0086] Furthermore, according to another embodiment of the present invention, ~~input orders~~ popularity ranks by categories may be computed by maintaining keyword groups by categories, without dividing the categories into representative/general categories.

[0087] The embodiments of the present invention include computer readable media including program instructions to implement various operations embodied by a computer. The media may also include, alone or in combination with the program instructions, data files, data structures, tables, and the like. The media and program instructions may be those specially designed and constructed for the purposes of the present invention, or they may be of the kind well known and available to those having skill in the computer software arts.

[0088] FIG. 7 is an internal block diagram of a general-purpose computer which can be more adopted in implementing the method for capturing of the multi-channel image signal according to the present invention.

[0089] The computer system 700 includes any number of processors 710 (also referred to as central processing units, or CPUs) that are coupled to storage devices including primary storage (typically a random access memory, or "RAM 720 "), primary storage (typically a read only memory, or "ROM 730"). As is well known in the art, ROM 730 acts to transfer data and instructions uni-directionally to the CPU and RAM 720 is used typically to transfer data and instructions in a bi-directional manner. Both of these primary storage devices may include any suitable type of the computer-readable media described above. A mass storage device 740 is also coupled bi-directionally to CPU and provides additional data storage capacity and may include any of the computer-readable media described above. The mass storage device 740 may be used to store programs, data and the like and is typically a secondary storage medium such as a hard disk that is slower than primary storage. A specific mass storage device such as a CD-ROM 760 may also pass data uni-directionally to the CPU. Processor 710 is also coupled to an interface 750 that includes one or more input/output devices such as such as video monitors, track balls, mice, keyboards, microphones, touch-sensitive displays, transducer card readers, magnetic or paper tape readers, tablets, styluses, voice or handwriting recognizers, or other well-known input devices such as, of course, other computers. Finally, processor 710 optionally may be coupled to a computer or telecommunications network using a network connection as shown generally at network interface 770. With such a network connection, it is contemplated that the CPU might receive information from the network, or might output information to the network in the course of performing the above-described method steps. The above-described devices and materials will be familiar to those of skill in the computer hardware and software arts.

[0090] The hardware elements above may be configured to act as one or more software modules for implementing the operations of this invention.

[0091] The foregoing descriptions of specific embodiments of the present invention have been presented for purposes of illustration and description. They are not intended to be exhaustive or to limit the invention to the precise forms disclosed, and obviously many modifications and variations are possible in light of the above teaching.

[0092] Therefore, it is intended that the scope of the invention be defined by the claims appended thereto and their equivalents.

[0093] Although the present invention has been described in connection with the embodiment of the present invention illustrated in the accompanying drawings, it is not limited thereto since it will be apparent to those skilled in the art that various substitutions, modifications and changes may be made thereto without departing from the scope and spirit of the invention.

Industrial Applicability

[0094] According to the present invention, there is provided search service system and method which can provide a user with ~~input orders~~ popularity ranks of keywords, by categories of keywords ~~input into~~ searched in the search service system.

[0095] Furthermore, according to the present invention, there is provided search service system and method which can further provide other keywords ~~belonging to~~ associated with a category ~~related to~~ associated with a keyword [[input]] searched in the search service system, and ~~an input order~~ a popularity rank of each of the keywords.

[0096] Furthermore, according to the present invention, there is provided search service system and method which, based on the latest interests of users who put keywords, can compute and provide ~~input orders~~ popularity ranks of keywords, by classifying categories ~~related to~~ associated

with the keyword into a representative category and a general category and by enabling the representative category and the general category to be changeable.

[0097] Furthermore, according to the present invention, there is provided search service system and method which can include keywords having similar or same meaning in one group of keywords, and in case that ~~an input~~ a searched keyword is included in the keyword group, compute and provide ~~an input order~~ a popularity rank of keyword compatible with a user's intention by increasing the number of [[input]] searched keywords ~~related to~~ associated with the keyword group.